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EXAMINER

HERTZOG, ARDITH E

ART UNIT PAPER NUMBER

1754

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,240

Applicant(s)

BALINGIT, RONALD F.

Examiner

Ardith E. Hertzog

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to applicant's amendment ("Amendment A") filed November 24, 2004. Claims 10-17, per said amendment, are pending. **However:**
2. Applicant's amendment is objected to under 35 U.S.C. § 132, because it introduces **new matter** into the disclosure. 35 U.S.C. § 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

In the Title of the Invention:

- a. "CONCURRENTLY"—it is not seen where the disclosure as originally filed (i.e., the originally filed title, abstract, drawings, specification and/or claims) supports the limitation that "sulfur compounds and particulates" are "concurrently" removed.

In the Specification:

- b. Page 2, line 5, the insertion of "or an electroprecipitator" between "bag filter" and "to collect". Such insertion finds no basis in the disclosure as originally filed.
- c. Page 2, line 15, the insertion of the sentence describing U.S. Patent 4,530,822 to Ashley et al. Such insertion finds no basis in the disclosure as originally filed.
- d. Page 2, the insertion of the sentence describing the prior art before "Summary of the Invention". Such insertion finds no basis in the disclosure as originally filed.
- e. Page 3, the deletion of lines 6-10 and their replacement with the following:
This invention is a process of **concurrently** removing sulfur compounds and particulates from a gas such that the gas is relatively dry after undergoing said process comprising the steps of:
(a) spraying a mixture of chemical reagent and water into the gas inside an enclosure while separately controlling the components of said mixture; and

(b) collecting the products of the chemical reaction and particulates inside said enclosure with the condensate on a solid surface, also inside said enclosure, whose temperature does not exceed the dew point temperature of the gas. (emphasis added).

As discussed *supra*, it is not seen where the disclosure as originally filed supports the limitation that "sulfur compounds and particulates" are "concurrently" removed.

f. Page 5; line 13, the replacement of "inject" with "spray". Such replacement finds no basis in the disclosure as originally filed.

g. Page 5, lines 17 to 18, the deletion of "as a function of the amount of sulfur compounds in the flue gas". Such deletion finds no basis in the disclosure as originally filed.

h. Page 5, the deletion of the two paragraphs before the last line.

i. Page 6, line 7, the replacement of "particulates and condensate" with "condensate, **products of the chemical reaction** and particulates" (emphasis added). That is, it is not seen where the originally filed disclosure supports the limitation that the **cleaning means removes** collected "products of the chemical reaction".

j. Page 6, the deletion of the third and fourth paragraphs from the last paragraph. Such deletion finds no basis in the disclosure as originally filed.

k. Page 7, third line from the last line, the insertion of a "will cause a partial vacuum and" between "total pressure" and "will create". Such insertion finds no basis in the disclosure as originally filed.

l. Page 8, line 11, the replacement of "condensate and trapped" with "collected condensate, **products of the chemical reaction** and" (emphasis added). That is, it is not seen where the originally filed disclosure supports the limitation that the **cleaning means removes** collected "products of the chemical reaction".

In the Abstract:

m. At line 1, "concurrently"; and at line 10, "the partial vacuum". As discussed *supra*, these limitations find no basis in the disclosure as originally filed.

3. Applicant's submission that "the revisions do not add new matter to the application" (see p. 6, point 5., of remarks accompanying amendment) has been carefully considered, however the examiner respectfully disagrees, for those reasons following each of points a.-m. above, noting that applicant has not pointed out where this new language is supported in the originally filed disclosure. With respect to the new matter **deletions** discussed in points g., h. and j. above, note that "[n]ew matter includes not only the addition of wholly unsupported subject matter, but may also include adding specific percentages or compounds after a broader original disclosure, **or even the omission of a step from a method**" (see MPEP § 706.03(o), emphasis added).
4. Applicant is required to **cancel** the new matter (which, with respect to the deletions noted *supra*, would mean adding same back into the specification) in any reply to this Office Action.
5. Applicant's amendment has **overcome** the objections to the abstract, specification and claims set forth in, respectively, paragraphs 5.-7., of the prior Office action with mailing date November 5, 2004 (hereinafter "the 11/5/04 action"), while a new, more descriptive title, per paragraph 4. of the 11/5/04 action, has been **entered**. (However, it is again noted that the current title, specification and abstract contain new matter which must be cancelled in any reply to this Office action.)
6. Applicant's amendment has **overcome** the 35 U.S.C. § 112, first paragraph, rejection set forth in paragraph 9. of the 11/5/04 action. **However**, note the **new** 35 U.S.C. § 112, first paragraph, rejection made in response to said amendment in paragraph 10. below (as well as the 35 U.S.C. § 112, second paragraph, rejections made in response to said amendment in paragraphs 12.-13. below).

Patent Prosecution Procedure

7. It is respectfully noted that an examination of this application, as well as the prosecution history, reveals that applicant may be unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

8. Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office". This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. **In addition**, a list of registered attorneys/agents by geographic region is accessible via the official Office website link:
<http://www.uspto.gov/web/offices/dcom/olia/oed/roster/region/index.html>.

Claim Rejections - 35 U.S.C. § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 10-17 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. This is a **new matter** rejection. As discussed in paragraph 2., specifically points a., e. and m., it is not seen where the originally filed disclosure supports the limitation that "sulfur compounds and particulates" are "concurrently" removed. Thus, with "concurrently" recited in the independent claim 10, all claims contain new matter. As **further** discussed in paragraph 2., specifically points i. and l., it is not seen where the originally filed disclosure supports the limitation that the **cleaning means removes**

collected "products of the chemical reaction". Thus, with this limitation recited in claim 15, claim 15 contains **further** new matter. Deleting "concurrently" from claim 10, **as well as** "products of the chemical reaction" from claim 15, would be one means of overcoming this rejection. Appropriate correction is required.

11. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 10-17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered vague, indefinite and confusing, due to at least an antecedent basis problem: Claim 10 (upon which claims 11-17 depend) fails to provide proper antecedent basis for "**the** condensate" (emphasis added) recited at line 2 of step (b). **Moreover**, it cannot be readily determined from claim 10 what comprises this "condensate", and thus the metes and bounds of the claims are unclear. One means of overcoming this rejection would be to delete "with the condensate" from step (b) of claim 10. **Alternatively**, replacing "the" with "water" before "condensate" at line 2 of step (b) of claim 10 would overcome this rejection (support being found in, for example, the last two paragraphs on p. 7 of the originally filed specification). Appropriate correction is required.

13. Claims 11-17 are **further** rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered **further** vague, indefinite and confusing, as follows: 1) With respect to claims 11, 14 and 15, applicant

evidently does **not** wish for the "injector means" (i.e., "means for injecting") of claim 11, the "cooling means" (i.e., "means for cooling") of claim 14, and the "cleaning means" (i.e., "means for cleaning") of claim 15 to invoke 35 U.S.C. § 112, sixth paragraph (see p. 6, point 8., of remarks accompanying amendment). **However**, as each of these claims still recites a "means plus function" limitation, they could still be properly construed to cover those corresponding **specific** embodiments set forth in the specification (for example, the "water jacket" "cooling means" and "plurality of helical scrapers" "cleaning means" disclosed at p. 7, fourth and fifth paragraphs), **as well as any equivalent means known in the art**, in accordance with 35 U.S.C. § 112, sixth paragraph (see especially MPEP § 2181 I.). While it must be noted that applicant **cannot** "broaden the application" (see again p. 6, point 8., of remarks accompanying amendment) after its filing date, if applicant does not wish to invoke 35 U.S.C. § 112, sixth paragraph, then it is suggested that claims 11, 14 and 15 be revised to **not** use "means plus function" language. Deleting "means" from claim 11; deleting "by a cooling means" from claim 14; **and** deleting "by a cleaning means" from claim 15 would be one possibility. 2) With respect to claims 12, 13, 16 and 17, it is not clear if applicant intends for the various "means" recited therein to invoke 35 U.S.C. § 112, sixth paragraph (as discussed with respect to original claims 5, 6 and 8 in paragraphs 10.-14. of the 11/5/04 action), given that the corresponding "means plus function" phrases were not present in any original claims treated on the merits in the 11/5/04 action. Thus, these claims have been included in this rejection, since "[i]n the event that it is unclear whether the claim limitation falls within the scope of 35 U.S.C. § 112, sixth paragraph, a rejection under 35 U.S.C. § 112, second paragraph may be appropriate" (see end of MPEP § 2181 I.). Here as well, if applicant does **not** wish to invoke 35 U.S.C. § 112, sixth

paragraph, then it is suggested that claims 12, 13, 16 and 17 be revised to **not** use “means plus function” language. Deleting “means” from **both** claims 12 **and** 13, **and** replacing “flow control means” with “flow controller” in **both** claims 16 **and** 17 would be one possibility. Clarification and/or appropriate correction are/is required.

Claim Rejections - 35 U.S.C. § 103

14. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 11-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ashley et al. (US 4,530,822) in view of GB 2 014 975 (hereinafter “GB ‘975”). Ashley et al. disclose processes of desulphurizing a hot flue gas by spray drying in a tower (see abstract), specifically discussing removal of the particles which result in such processes:

...[i.e.,] the use of spray dryer systems... for spraying a sulphur dioxide absorbing solution or slurry into a hot flue gas stream. As the absorbent removes the sulphur dioxide from the gas, the water evaporates from the spray droplets, leaving a dry powder containing the sulphur dioxide, **some of which powder readily separates from the gas for immediate collection.** Since the flue gas will still contain some particles of the powder it is appropriate to pass the effluent gas from the spray dryer through a bag filter or an electroprecipitator prior to release to the atmosphere. (col. 1, lines 42-55, emphasis added)

Hence, at least some powder (particles) is/are **concurrently** removed with the sulphur dioxide, as now required by applicant’s claims. Ashley et al. **also** note that “the gas leaves the spray dryer unsaturated, thus avoiding potential corrosion problems and the need to reheat the gas to prevent a permanent steam plume from the stack” (see col. 1, lines 56-

68, especially lines 60-63). **Thus**, Ashley et al. teach processes “of concurrently removing sulfur compounds and particulates from a gas such that the gas is relatively dry after undergoing said process”, per the preamble of applicant’s independent claim 10. **In addition**, the Ashley et al. desulphurizing apparatus comprises:

(a) a gas/liquid contacting vessel which comprises an inlet and an outlet for the gas; (b) means for supplying to the vessel an aqueous solution or slurry which absorbs sulphur dioxide with chemical reaction; (c) means communicating with the vessel outlet for removing suspended particles from the gas which has been contacted with solution or slurry in the vessel; and (d) means for controlling the conditions in the gas in the vessel such that in operation the reaction product is dried as it is formed and all the water is evaporated; the means for supplying the aqueous solution or slurry comprising a spray device adapted to direct the solution or slurry from an extended surface of the device into the gas in the vessel, which spray device comprises... (col. 3, lines 3-18, emphasis added)

Note that the above “gas/liquid contacting vessel” (a) reads on the “enclosure” of applicant’s claims, which includes “an inlet and an outlet for the gas”, per, respectively, instant claims 12 and 13. Note that the above “aqueous solution or slurry which absorbs sulphur dioxide with chemical reaction” in (b) comprises an aqueous solution of sodium carbonate or lime (see col. 2, lines 12-13, as well as Ashley et al. claims 9 and 11), i.e., “a mixture of chemical reagent and water”, per instant claim 10, step (a), which is introduced into the vessel via “a spray device”, i.e., “spraying”, per instant claim 10, step (a), thus also reading on the “injector...” of instant claim 11. **Furthermore**, within the “gas/liquid contacting vessel”—namely, “desulphurizing tower 6”, per Figure 4:

Absorbent solutions... are... pumped... to a plurality of rotary-cup atomizers 9 at the top of tower 6. ... Hot gas, for example boiler flue gas at a temperature between 120° C. and 200° C. containing sulphur dioxide (e.g. 300-3,000 p.p.m. SO₂ by volume)[,] is directed to the top of the tower 6 via line 10. Spray drying occurs in the tower 6... upon contact of the hot gas and

the atomized absorbent, and dry powder effluent is collected at the bottom of tower 6 and removed via a valve 6a. (col. 5, lines 59 – col. 6, line 5)

Hence, at least some “products of the chemical reaction and particulates inside” will collect with “condensate on a solid surface... inside said enclosure”, per instant claim 10, step (b), noting that the inner wall of tower 6 is **clearly** “a solid surface” **and** that at least some “atomized absorbent” may be reasonably presumed to condense on this wall during spray-drying—especially as Ashley et al. **specifically** discuss “(d) means for controlling the conditions in the gas in the vessel such that in operation the reaction product is dried as it is formed and all the water is **evaporated**” (see again col. 3, lines 12-14, emphasis added). **Moreover**, as the “dry powder effluent is collected at the bottom of tower 6 and removed via a valve 6a”, noting that any “atomized absorbent” condensate on the wall may be reasonably presumed to subsequently evaporate—especially as Ashley et al. **specifically** discuss wanting to **avoid “incomplete evaporation”** (see col. 6, lines 38-43, emphasis added)—“said solid surface is cleaned of collected condensate, products of the chemical reaction and particulates...”, per instant claim 15. **Accordingly**, Ashley et al. only fail to anticipate applicant’s claims 11-17, in that: 1) “**separately** controlling the components of” (emphasis added) the “aqueous solution or slurry which absorbs sulphur dioxide with chemical reaction”, per instant claim 10, step (a) (and thus the corresponding limitations of instant claims 16 and 17) is not disclosed; **and** 2) the temperature of the inner wall of tower 6 (which, again, now reads on applicant’s “solid surface”), per the end of instant claim 10 (and thus the corresponding “cooled” limitation of instant claim 14), is not disclosed. **However**, with respect to 2), Ashley et al. **explicitly** teach:

It is preferred that the gas exiting the tower 6 at 10a **be as close to its dewpoint consistent with maintaining unsaturation at the stack 13; for**

example 5° to 15° C. above the dewpoint at 10a. It is believed that this enhances the efficiency of absorption in the tower 6 and also of the bag filter if used at 5. (col. 6, lines 27-32, emphasis added)

Note that with the above, the criticality of “the dew point temperature of the flue gas” is **clearly** taught; **further** note that “as close to its dewpoint...” may be considered to **at least overlap** the “does not exceed the dew point...” limitation now required by applicant’s claims. **Therefore**, it would have been obvious to one of ordinary skill in the art, at the time of applicant’s invention, to have ensured that the **inner wall** of Ashley et al. tower 6 (which, once again, now reads on applicant’s “solid surface”) was “as close to its [(i.e., the exiting gas)] dewpoint consistent with maintaining unsaturation at the stack 13”, in order to ensure that the exiting gas **itself** was “as close to its dewpoint consistent with maintaining unsaturation at the stack 13”, as **clearly** taught by Ashley et al. When having done so, it would have been **further** obvious to ensure that the **inner wall** of tower 6 was “cooled” as necessary, per instant claim 14, in order to ensure that, again, the exiting gas **itself** was “as close to its dewpoint consistent with maintaining unsaturation at the stack 13”, as **clearly** taught by Ashley et al. **Therefore**, the only limitation of applicant’s claims 11-17 not taught nor rendered obvious by Ashley et al. is 1) noted *supra*—again, “**separately** controlling the components of” (emphasis added) the “aqueous solution or slurry which absorbs sulphur dioxide with chemical reaction”, per instant claim 10, step (a) (and thus the corresponding limitations of instant claims 16 and 17).

16. GB ‘975, specifically discussed by Ashley et al. as an exemplary “known spray dryer technique” (see Ashley et al. col. 2, lines 1-11), teaches not only use of the same absorbent solutions/slurries as Ashley et al., but also “separately controlling the components of... [such] mixture[s]”, per instant claim 10, step (a) (see GB ‘975 p. 3, lines

1-3, 13-19; p. 6, lines 28-31, in concert with the drawing). **Therefore**, it would have been obvious to one of ordinary skill in the art, at the time of applicant's invention, to have separately controlled the components of the Ashley et al. absorbent solutions/slurries, because GB '975 establishes that doing so would have been a conventional, art-recognized alternative. When having done so, it is respectfully submitted that, absent contrary evidence, processes falling within the scope of instant claims 11-17 would have obviously resulted.

Response to Arguments

17. With respect to the prior art rejection now of record, applicant's arguments filed November 24, 2004 have been fully considered, but they have not been found persuasive. Insofar as these arguments still pertain to the above prior art rejection and/or have not been addressed in the detailed explanation of this rejection, the following comments (numbers and letters paralleling those used in applicant's remarks) are respectfully submitted:

9. (A) While 35 U.S.C. § 102 is no longer deemed applicable against the instant claims, all claims **have** been rejected under 35 U.S.C. § 103(a). **In addition**, there is no **evidence** of record in support of applicant's assertion that "the physical distinctions produce new and unexpected results, solve a long-felt, long-existing, but unsolved need, and effect a new principle of operation". As discussed in MPEP 716.01(c) II.:

The arguments of counsel [(or, in this case, of applicant)] cannot take the place of **evidence** in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include **statements regarding unexpected results**, commercial success, **solution of a long-felt need**, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the

prior art derived the disclosed subject matter from the applicant. (emphasis added)

See also MPEP § 716.04 in its entirety: “Long-Felt Need and Failure of Others”.

9. (B) While evidently **preferred** by Ashley et al., neither an electrostatic precipitator nor a bag filter is **required** in the Ashley et al. processes (see, for example, Ashley et al. col. 5, lines 57-58 (noting the word “may”), and col. 6, lines 30-32 (noting the words “if used”), further noting that claims 10 and 12 are dependent claims and thus not considered essential in the Ashley et al. claimed methods). “A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989)” (see MPEP § 2123). **In addition**, the word “concurrently” does not **exclude** the use of either an electrostatic precipitator or a bag filter from the instantly claimed processes.

9. (C) Given the teachings of GB ‘975 relied upon *supra*, the use of **separate** “chemical reagent supply flow control means” and “water supply flow control means” cannot be considered to have been unobvious to one of ordinary skill in the art.

9. (D) As discussed *supra*, the “spray device” of Ashley et al. still reads upon applicant’s “injector means”, as recited in instant claim 11.

9. (E) Since the “compelling of the gas to interact with a solid surface” limitation is no longer recited in the instant claims, Ashley et al. are no longer relied upon for the four deflector vanes teaching.

9. (F) As discussed *supra*, Ashley et al. are still considered to have rendered the “cleaned” limitations of instant claim 15 *prima facie* obvious.

9. (G) Whether or not “the present invention excludes temperatures above the dew point temperature of the gas”, **overlap** is still considered to exist between the “as close to its dewpoint...” limitation of Ashley et al. and the “does not exceed the dew point...” limitation now required by applicant’s claims, as discussed *supra*. As also discussed *supra*, it is considered to have been obvious to have ensured that the **inner wall** of Ashley et al. tower 6 (which now reads on applicant’s “solid surface”) was “as close to its [(i.e., the exiting gas)] dewpoint consistent with maintaining unsaturation at the stack 13”, in order to ensure that the exiting gas **itself** was “as close to its dewpoint consistent with maintaining unsaturation at the stack 13”.

9. (H) Irrespective of the reason why, as acknowledged by applicant, the Ashley et al. patent and the present invention **both** “require the use of an amount of water which will not cause the gas to be supersaturated”. As discussed in MPEP § 2144 (specifically, the subsection entitled, “Rationale Different From Applicant’s Is Permissible):

The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972)...; *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), cert. denied, 500 U.S. 904 (1991).... Although *Ex parte Levengood*, 28 USPQ2d 1300, 1302 (Bd. Pat. App. & Inter. 1993) states that obviousness cannot be established by combining references “without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done” (emphasis added), reading the quotation in context it is clear that while there must be motivation to make the claimed invention, there is no requirement that the prior art provide the same reason as the applicant to make the claimed invention.

9. (I) Since the “function of sulfur compounds in the gas” limitation is no longer recited in the instant claims, Ashley et al. are no longer relied upon for the stoichiometric

ratio of absorbent to sulfur dioxide teaching.

10. (A) Given that "the mixture of chemical reagent and water is **not necessarily** abrasive" (emphasis added) in the present invention, the instant claims are clearly open to the use of such abrasive mixtures. And, as discussed *supra*, Ashley et al. do not **require** the use of "a separate removing means for removing suspended solids", while the word "concurrently" does not **exclude** same from the instantly claimed processes.

10. (B) See remarks in 9. (G) above.

10. (C) As discussed *supra*, Ashley et al. are still considered to have rendered the "cooled" limitations of instant claim 14 *prima facie* obvious.

12. See remarks in 9. (A) and 9. (B) above.

13.-14. See again remarks in 9. (A) and 9. (B) above.

15.-16. See again remarks in 9. (A) and 9. (B) above.

17.-18. It is respectfully submitted that no unobviousness is seen between those processes rendered *prima facie* obvious based upon the combined teachings of Ashley et al. and GB '975, as set forth *supra*, and processes falling within the scope of the instant claims, **as currently written**. That is, it is not seen how applicant's "new principle of operation" and/or "fly-trap effect enhanced by the partial vacuum caused by condensation", **as currently recited in the instant claims**, is any different from what would have been *prima facie* obvious over Ashley et al. in view of GB '975, as set forth *supra*. Note that "[a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)" (see MPEP § 2145 VI.).

19. Irrespective of whether or not the instant invention is in a crowded art, it is

respectfully maintained that applicant's invention, **as currently recited in the instant claims**, would have been *prima facie* obvious, for those reasons set forth in the detailed explanation given in paragraphs 15.-16. above.

20. It is appreciated that "[d]iligent effort has been made to amend the claims of this application..." but respectfully submitted that the instant claims cannot be considered "in full condition for allowance", given the various rejections now of record. Applicant's request, per MPEP § 707.07(j), is noted; **however**, given the various rejections of record, it is respectfully submitted that such request is premature at this time. Note that "constructive suggestions pursuant to MPEP § 706.03(d)" have been made in both 35 U.S.C. § 112, second paragraph, rejections now of record.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are considered cumulative to or less material than those previously made of record. Note that US 4,197,278 is an equivalent of GB '975 applied *supra*; similarly, US 4,279,873 is an equivalent of GB 2 021 086 (also discussed in Ashley et al. at col. 2, lines 1-11) cited herewith.

19. This action is a **final rejection** and is intended to close the prosecution of this application. Applicant's reply under 37 CFR § 1.113 to this action is limited either to an appeal to the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

20. If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee of \$250.00.

21. If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the

application which otherwise might not be proper may be admitted upon a showing a good and sufficient reasons why they are necessary and why they were not presented earlier.

22. A reply under 37 CFR § 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR § 1.136(a) or (b), the application will become abandoned.

23. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR § 1.136(a).

24. **A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR § 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.**

25. Any inquiry concerning this communication or any earlier communications from the examiner should be directed to Ardith E. Hertzog at telephone number (571) 272-1347.

The examiner can normally be reached on Monday through Friday (from about 8:00 a.m. - 4:00 p.m., E.S.T.).

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman, can be reached at (571) 272-1358. The fax phone number for the organization where this application is assigned is 703-872-9306.

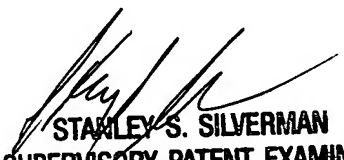
27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AEH
January 24, 2005



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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700